pedagogy strategy

learning in an ONLINE world

MCEETYA

Australia – New Zealand

Pedagogies that integrate information and communication technologies can engage students in ways not previously possible, enhance achievement, create new learning possibilities and extend interaction with local and global communities.

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context

Learning in an online world 2003 – 06 articulates national priorities for action by schools and associated organisations to develop pedagogies that integrate information and communication technologies (ICT).

The *Pedagogy Strategy – Learning in an online world* focuses on ICT as an enabler of good pedagogy. It highlights issues for consideration when planning for integration of ICT in the learning environment.

21st century students

The current generation of students was born into a highly technological world. They inhabit, navigate and communicate within a society which is both technologically-rich and information-rich.

Families increasingly use ICT for learning, recreation, management and communication. Technologies are cheaper, more mobile and able to be used by learners of all ages.

Our students' worlds are increasingly being shaped by their abilities to acquire, communicate, access and manipulate information using ICT and to respond creatively to emerging technologies.

21st century schools

Education systems have responded to these needs and aspirations, acknowledging that ICT capabilities are essential for participation in today's society and economy.

The productive engagement by teachers and schools with ICT is becoming part of the everyday practices of all schools. This engagement is supported by:

- curriculum frameworks grounded in student-centred learning
- high levels of interest and ICT skills among students
- increasing levels of connectivity, reliable hardware, software, quality content, services and technical support in schools
- smaller, functional, handheld, user-friendly technologies
- professional learning and quality leadership.

Making technologies available does not of itself result in changed teaching methods or in the level of learning outcomes. Effective use of ICT in education requires appropriate pedagogies.

The power of pedagogy

The considered use of ICT can transform the teacher role, creating new learning environments. Teacher pedagogies will determine the extent to which the possibilities offered by technology are realised in education settings.

pedagogies

Pedagogies used by most teachers in Australia and New Zealand reflect a long tradition of learner-centred theories of education. These theories require learning to be:

- individualised and collaborative
- experiential, building on prior learning
- self-managed and cumulative
- authentic
- directed to higher-order problem solving.

The use of information and communication technologies builds on, and extends these pedagogical approaches.

Pedagogies integrating ICT can do more than enhance learning – they have the potential to transform learning. ICT provide tools and environments that support interactive conceptual learning, focussed on constructing and creating knowledge.

Teachers integrate ICT to engage students in new dimensions in:

- exploring and experimenting
- thinking and working creatively
- reflecting and planning
- using feedback and self-assessment
- creating new knowledge
- communicating with others
- working interactively with local and global learning communities.

Teachers play a crucial professional role in ensuring that the integration of ICT into pedagogies is educationally sound. They evaluate the appropriateness and effectiveness of available technologies, deciding when and how to use them with their students.

Teachers integrating ICT into their pedagogies select appropriate learning activities, tools and resources to:

- motivate and engage
- personalise learning
- engage with diversity to support inclusiveness
- develop ICT literacies
- establish communities of learning
- assess progress and evaluate teaching.

The effectiveness of integrating ICT pedagogies depends on high levels of interactivity amongst and between students and teachers, and between students and the technologies they use.

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ICT TRANSFORMS PROCESSES OF LEARNING AND TEACHING : CHILD-CENTRED : FLEXIBLE PRO

LEARNING THEORIES : INQUIRY-BASED : MEDIATED : CONSTRUCTIVISM : MULTIPLE

EDUCATION THINKERS : PIAGET : DEWEY: VYGOTSKY : FREIRE : BOOMER : GARDNER :

in an online world

In teaching for conceptual development, teachers use ICT to:

- empower students to purposefully select activities, applications and modes of communication
- gather and make electronic resources available to students for 'anytime' access
- use information from online sources
- select and use learning objects to create learning activities and sequences
- provide processing and presentation tools
- engage students in simulations, modelling and creative activities
- encourage the use of games and programs that contextualise concepts
- provide problem-solving challenges
- engage students with virtual objects and worlds.

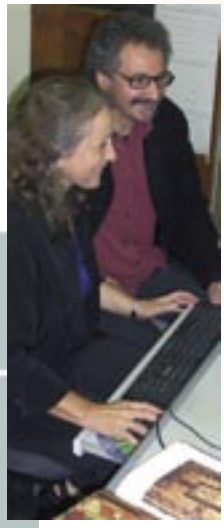
In building learning communities, teachers use ICT to:

- provide communication and collaboration tools such as chat, email, messaging, discussion forums, online meetings and video conferencing
- provide opportunities for students to be part of broader communities
- support student participation in online collaborative projects
- make learning activities, information, courses and feedback available online anywhere – anytime.
- support students using online resources to share with other students and experts
- increase parent access to student work.

In planning, programming, assessing and reporting teachers use ICT to:

- align programs and resources with curriculum frameworks
- store, retrieve and adapt teaching materials and approaches
- facilitate informal and formal assessment
- provide students with more immediate feedback from teachers and their peers
- track progress and record completion and achievement.

Learner-centred theories stress the importance of the relationship between the family, the school, and the community. Communication enabled by the use of ICT facilitates this relationship. It provides new opportunities for parents to engage with teachers, learning programs, and their children's progress.



The following principles provide a framework for developing innovative pedagogies for learning in an online world and for evaluating their effectiveness.

Learner Focus

Effective integration of ICT can transform pedagogies by empowering teachers to:

- focus on student-centred, active and interactive learning
- connect with learner expectations, experiences and needs
- provide opportunities for students to create, construct and communicate knowledge
- develop critical and ethical understandings of the value of the use of ICT.

Educational Soundness

Effective integration of ICT can transform pedagogies by empowering teachers to:

- ensure that the use of ICT adds value to the intended learning
- design learning programs that ensure the integrity of the learning area and the inclusion of all students
- scaffold learning using appropriate technologies, content, services and environments
- appraise the effectiveness, efficiencies and ethics of the use of ICT in the design of learning programs.

Professional Learning

Effective integration of ICT can transform pedagogies by empowering teachers to:

- connect with and learn from colleagues and students and participating in professional learning programs
- explore, understand and utilise the potential of ICT in teaching, management and administration
- appraise pedagogies made possible by new technologies
- evaluate, create and share online learning resources with colleagues and shape the development of resources and products.

ICT and pedagogies

Diversity

Effective integration of ICT can transform pedagogies by empowering teachers to:

- make connections with learning goals and prior knowledge
- provide culturally diverse perspectives
- motivate and support students whose learning is at risk
- provide a range of learning experiences, at varying levels of complexity, including real and hypothetical problems, simulations, modelling, dialogue and games.

Alignment

Effective integration of ICT can transform pedagogies by empowering teachers to:

- use planning tools to connect learning programs with curriculum assessment and reporting frameworks
- communicate in ways that cater for the diverse needs of students and their families
- share information, practices and understandings across schools and education systems
- incorporate learning practices used in the world beyond schooling.

Collaboration

Effective integration of ICT can transform pedagogies by empowering teachers to:

- work with students and utilise their expertise to incorporate new technologies to support their learning
- support and develop collaborative projects
- provide opportunities for students to access and interact with community, industry and educational specialists
- develop partnerships with local and global communities.

realising possibilities

Teachers discover a new potential for their work as they exploit the opportunities that using ICT in learning provides. They engage with the possibilities created by the range of technologies, increasing portability and user-friendliness, and opportunities created by high-speed connectivity to worlds beyond the classroom.

Teachers experiment, in a critically professional way, with pedagogies that utilise technologies to:

- connect to collective professional experience
- take advantage of students' disposition to ICT
- create new learning environments and models of schooling.

Teachers understand that technologies alter and enhance their role, and that the possibilities that ICT afford in education are realised through their judgements and work.

Creating new learning environments

Blended learning environments allow students to take part in both synchronous and asynchronous learning, overcoming barriers of communication, time and distance. Students connect from home to the learning program and to worlds outside the classroom. This can connect students more closely to communities, significantly reduce the effects of remoteness, and engage students disaffected with schooling.

Making teaching and learning more effective and efficient

Information and communication technologies that have high applicability to teachers' work are easily applied. These technologies have customisation tools that create efficiencies in preparation, programming, assessment and reporting. This enables learning to be more effectively directed, managed and negotiated with students.

Extending the depth and nature of learning

Students have expectations that ICT will be used to adapt to their individual, developmental and cultural differences. Using ICT creates interest, requires new expertise, and establishes different types of learning goals. Technologies connect students to specialist programs, teaching and expertise not available in their school. Students use ICT to digitalise, represent and analyse information, creating new forms of conceptualisation and meta-cognition.

in an online world

Enhancing communication and collaboration

Teachers and students use ICT to build partnerships beyond the classroom, expanding the community of learners and enhancing the quality of learning. Online communities provide new and exciting opportunities for students to interact with relevant groups and individuals. Collaborative online communities facilitate the ways that student input can be accessed and built upon by other students, teachers and a range of professionals and experts.

Creating new education communities

Using ICT increases the modes of teaching and learning and the range of people who can be involved. Teachers can connect with university and industry researchers and create new collegial structures. Students connect as learners and as experts with local and global communities. Technologies support dynamic relationships between families, the school and other communities.

Taking advantage

The possibilities for expanding pedagogies include appraising the potential of, and using:

- technologies and services that bring real-world experiences, data and problems into the classroom for analysis
- analytical and abstraction tools including spreadsheets, graphing programs, function probes and animation programs
- modelling, simulation and visualisation programs that extend conceptualisation and expand learning possibilities
- programs for multiple and dynamic representations of information
- new multimedia software to explore significant ideas and issues
- programs that support student reflection and automatically identify errors
- information management systems for teacher programming, banking and sharing lesson resources, monitoring student progress, and administration
- programs enabling customisation to make individualised learning and multiple learning needs more manageable
- school, class and individual sites where attendance, teacher program, assignment tasks, and student work are posted.

professional support

Teachers learn to use technologies most effectively in the context of their own work and the pursuit of their professional needs.

Quality teaching and learning that integrates information communication technologies depends on:

- pedagogical knowledge and skills
- understanding the potential of ICT to support learning
- knowledge of current and emerging technologies
- opportunities to explore and develop skills in the use of ICT.

Professional considerations

Ethical issues arise as students access sites, communities and individuals online. Integrating ICT into teaching raises questions about purposes, roles, responsibilites and relationships in education.

Effective professional support recognises teacher judgements and is grounded in:

- a whole school planned and sustained ICT integration program
- opportunities to partner innovation with colleagues, students, school and broader communities
- long-term experiential learning.

Professional learning

Professional learning that builds teacher capacity to use integrated pedagogies is essential in ensuring ICT supports student learning.

Ministers of Australia and New Zealand (2004) endorsed the need to achieve:

- a teaching profession skilled in the use of online content
- a shared pool of good practice documentation in the use of online curriculum content
- national and international networks of communities of practice.

Professional development of teachers and support staff is essential. *Australia's Teachers: Australia's Future (2003)* recommends:

- all teacher education programs prepare prospective teachers for the digital age, and
- opportunities be created for teachers to upgrade their ICT knowledge and skills.

in an online world

Professional development

New pedagogical skills and knowledge are required. These are supported by professional development addressing the multiple, interactive dimensions of the use of ICT:

- exploring the potential of ICT
- using word processing, planning tools digital content, learning software and services
- working with multimedia
- integrating ICT into curriculum planning and using a variety of technologies and tools
- establishing an ICT supported inquiry-based learning environment
- managing the transformative outcomes of utilising ICT.

Using ICT to learn

Teachers with support move from "learning-to-use" to "using-to-learn". Effective professional development involves:

- strategic planning by jurisdictions and schools
- recognition of prior learning
- flexible programs, incorporating face-to-face, online and community learning
- participant direction
- increasing learning effectiveness and efficiency
- engaging in the professional work of teaching and assessment
- catering for a diverse range of learning needs
- local delivery and support, related to the teaching environment
- using an inclusive range of technologies and tools including games, text-messaging and other devices
- including support staff working with teachers
- using tools to evaluate the extent of integration of ICT in pedagogies
- timely user and technical support.

leadership

Visionary leadership recognises the critical role of teachers in ensuring the power of information communication technologies is used to transform pedagogies and learning in schools.

This leadership ensures teachers develop the knowledge, competence, skills and confidence to exercise professional judgement in utilising ICT in learning.

Promoting pedagogic leadership

Government and jurisdictions:

- ensure curriculum design incorporates ICT in visionary ways and schools have integration processes and structures
- ensure teachers and support staff have access to professional development, training, support resources and technical support
- provide national and local networks for sharing practice.

Principals and teachers:

- promote integrating ICT pedagogies within school improvement planning
- collaborate on ways to extend learning within and beyond the classroom, and to communicate more effectively with parents and the community.

Professional and collegial organisations:

- include integrating ICT pedagogies in teacher competencies and professional expectations
- support new pedagogies and maintain communities of practice.

Universities and research organisations:

- include pedagogies integrating ICT in pre-service programs
- conduct and disseminate research on effective pedagogies and learning.

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